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# 1982

# ANNUAL REPORT

under

# THE WATER POWER ACT

Section 20, Chapter W-6, RSS.

Submitted by:

Saskatchewan Department
of the Environment

# ANNUAL REPORT UNDER THE WATER POWER ACT

Section 20, Chapter W-6, RSS. 1978

For the Calendar Year 1982

## Legislative

An order-in-council 1117/82 dated July 7, 1982 amended section 48 of the Regulations under The Water Power Act to increase the annual water rental charges from $1.25 to $2.50 per horsepower year. The method of determining these water rentals was altered to permit a more direct method of calculation. The new water rentals came into force on October 1, 1982.

## Water Power Generation in 1982

The total hydroelectric power generation in the Province of Saskatchewan in 1982 was 2,371,237,400 kilowatt hours. This was 18 per cent less than the power generated in 1981. Generally, reduced precipitation resulting in lower flows in most of the streams serving the water power plants was responsible for decreased power generation in 1982.

The total hydroelectric power generation over the past five years was as follows:

| | |
|---|---|
| 1978 | 2,560,981,900 kwh |
| 1979 | 2,426,223,500 |
| 1980 | 2,559,875,000 |
| 1981 | 2,907,544,700 |
| 1982 | 2,371,237,400 |
| 5 year average | 2,565,172,400 kwh |

## Climatic Conditions

Precipitation in the South Saskatchewan River basin was slightly below normal resulting in flows which were 89 per cent of the normal flow. April and May were the only months which experienced above normal flows.

Precipitation in the North Saskatchewan River basin was normal from January to October and about 50 per cent of normal for the remainder of 1982. The yearly streamflow was 112 per cent of normal with above normal flows in May, July and August. The remainder of the year experienced near normal to below normal flows.

Precipitation in the Reindeer Lake basin was near normal while it was below normal for the Upper Churchill River basin. Streamflows in the Reindeer Lake area increased slightly over those in 1981 with the result that Reindeer Lake remained at about the same elevation as in 1981. Streamflows in the Upper Churchill River continued below normal.

Precipitation in the Tazin Lake basin was below normal for the first three months and above normal from April to November. The Tazin Lake elevation which was very low in 1981 recovered by 1 metre in 1982.

Individual Project Information

1. Island Falls Project

Location: On the Churchill River approximately 20 km west of the Manitoba boundary and includes a control structure on the outlet of Reindeer Lake.

Owner: Province of Saskatchewan and operated by the SPC.

Status: Licence is being prepared. Compensation for the take-over of this project was concluded in 1982.

Source of Water: The Churchill River and Reindeer Lake.

Turbine Capacity: 7 units - totalling 125,000 hp (16,000 hp standby).

Power Used: By Flin Flon Mines and Creighton by an exchange agreement with the Province of Manitoba.

Power Generated in 1982: 604,162,400 kwh.

Major Construction in 1982: Nil.

2. Squaw Rapids Project

Location: On the Saskatchewan River about 60 km northeast of Nipawin.

Owner: Saskatchewan Power Corporation.

Status: Licence being prepared.

Source: The Saskatchewan River.

Turbine Capacity: 396,000 hp.

Power Used: In the SPC provincial grid.

Power Generated in 1982: 1,021,612,000 kwh.

Major Construction in 1982: Nil.

3. Coteau Creek Project

Location: On South Saskatchewan River at Gardiner Dam.

Owner: Saskatchewan Power Corporation.

Status: Licence being prepared.

Source of Water: South Saskatchewan River.

Turbine Capacity: 252,000 hp.

Power Used: In the SPC provincial grid.

Power Generated in 1982: 663,288,000 kwh.

4. Wellington Lake Project

Location: On the Charlot River 24 km west of Uranium City.

Owner: Eldorado Nuclear Limited.

Status: Final licence expired December 1, 1981. The owner was authorized to continue operation until a new licence is granted.

Source of Water: Charlot River and Tazin Lake.

Turbine Capacity: 6,600 hp.

Power Used: By Eldorado Nuclear Limited and North Saskatchewan Electric in Uranium City.

Power Generated in 1982: 32,976,000 kwh.

Major Construction in 1982: Temporary diversion from Ena Lake to Tazin Lake closed off.

5. Waterloo Lake Project

Location: On Charlot River 26 km west of Uranium City.

Owner: Eldorado Nuclear Limited.

Status: Final licence expired December 1, 1981. The owner was authorized to continue operation until a new licence is granted. This project has not been in operation since August, 1982.

Source of Water: Charlot River and Tazin Lake.

Turbine Capacity: 10,000 hp.

Power Used by: Eldorado Nuclear Limited and North Saskatchewan Electric at Uranium City.

Power Generated in 1982: 14,889,000 kwh.

Major Construction in 1982: Nil.

6. Charlot River Project

Location: On the Charlot River 29 km west of Uranium City.

Owner: Eldorado Nuclear Limited.

Status: Licence being prepared.

Source of Water: Charlot River and Tazin Lake.

Turbine Capacity: 15,200 hp.

Power Used: Eldorado Nuclear Limited.

Power Generated in 1982: 34,360,000 kwh.

Major Construction in 1982: Nil.

7. Nipawin Project

Location: On the Saskatchewan River 5 km above the Town of Nipawin.

Owner: Saskatchewan Power Corporation.

Status: Project under construction.

Source of Water: The Saskatchewan River.

Turbine Capacity: 347,850 hp (proposed).

Power Used: In the SPC provincial grid.

Power Generated in 1982: Nil.

Major Construction in 1982: Construction began.